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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,549	11/21/2003	Robert G. Graham	MSH - 275	3413
8131	7590	06/27/2006	EXAMINER	
MCKELLAR IP LAW, PLLC			BHAT, NINA	
784 SOUTH POSEYVILLE ROAD				
MIDLAND, MI 48640			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/719,549	Applicant(s) GRAHAM, ROBERT G.	
	Examiner N. Bhat	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-89 is/are pending in the application.
- 4a) Of the above claim(s) 48-89 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-89 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of Group I, claims 1-47 in the reply filed on April 7, 2006 is acknowledged. The restriction requirement is hereby made FINAL. Claims 48-89 have been withdrawn from further consideration. Action on the merits of claims 1-47 follows:

2. The abstract of the disclosure is objected to because applicant should now amend the abstract to be limited to what has been elected, i.e., to the gasifier and examined. Applicant is also reminded to refrain from talking about the method which is not claimed. Correction is required. See MPEP § 608.01(b).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cordell et al. USP 4,971,599 in combination with Williams et al.

Cordell et al. teach the invention substantially as claimed. Cordell et al teach a gasifier for producing heat by the gasification of solid, organic biomass material. The apparatus includes gasifier which includes a fully refractory lined substantially cylindrical chamber which includes a flat bottom which opens at it stop into an open down ward facing hemispherical dome (404). The base of the cylinder vessel includes a grate.[Note Column 5, lines 4-62] The annular grate is made up of a first annular plate member (421) and a second annular plate member (422), with the first annular plate member (421) being superimposed on the second annular plate member (422). The annular plate member (421) is provided with a spaced apart series of radially extending slots (423) and the second annular plate member (422) is provided with a spaced apart series of radially extending slots (424), which has been depicted with Figure 6. The apparatus of Cordell et al. teach feeding material into the gasifier using horizontal screw member to remove material into and out of the gasifier.[Note Column 7, lines 42 through Column 8, line 65] Cordell et al. teach using a manifold for introducing air into the gasifier.

However, Cordell et al. do not teach wedge shaped individual cell configuration forming the furnace bed nor specifically including temperature-sensing thermocouples in the gasifier.

Williams et al. teach a grate structure for solid fuel gasifiers. A solid fuel gasifier includes a housing (12) defining a gasifier chamber 914) and a solid fuel inlet (21), grate structure (22,24) in the gasifier chamber. The grate structure includes a base means, a plurality of agitator segments positioned relative to the base to agitate a fuel load in the

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gasifier. Williams et al. teach that the grate structure is made of a plurality or an array of cavities filled with a refractory material, which is preferably a ceramic material. The dispersed array of cavities is such that the grate segment exhibits a generally honeycomb structure.[Note paragraphs 007-0024] Williams et al. teach using a plurality of nozzles or tuyeres for introducing air or gas into the gasifier to enhance combustion.[See Figure 11]

It would have been obvious to one having ordinary skill in the art at the time the invention was made from the teachings of Cordell et al. and Williams et al. which both references teach a gasifier which is capable of pyrolyzing organic material which includes generally a cylindrical vessel, which is capable of gasification or primary combustion which includes a refractory lined vessel, the bottom of the vessel including augers which introduce solid biomass which is to be pyrolyzed. The base of the gasifier as taught in Cordell et al. and Williams et al. both include using a grate. The grate is a ceramic material as taught in both references, the grate is segmented or compartmentalizes the base of the gasifier, but is has not been specifically taught as a plurality of individual modular cells, the grate of Williams is composed of honeycomb ceramic segments which obviously functions equivalently to applicant's modular cells. The grate of Cordell et al. is segmented and to replace the grate with the honeycomb grate of William et al. renders applicant's gasifier including a plurality of individual modular cells lined with refractory obvious to one having ordinary skill in the art. With respect to applicant's array of tuyeres, Cordell et.al. teach providing nozzles or manifold for introducing air into the gasifier. Williams et al. include using nozzles, which are

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disposed within the gasifier for introducing air into the chamber for combustion/gasification. With respect to applicant's limitation regarding how the cells are joined, the rim section etc., this are obvious expedients in light of the construction of Williams honeycomb grate and it is maintained that the grate would function equivalently as applicant's individual cells absent criticality in showing. With respect to applicant's limitation regarding including a temperature sensor, it is maintained that including temperature sensing means or means for sensing a condition within a gasifier would have been obvious to the ordinary artisan.


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cordell et al. '846 teach a method and apparatus for gasifying solid organic material. Morey et al. teach a hot gas generation system for producing combustible gases for a burner from particulate solid organic biomass and represents the closest prior art to applicant's entire system including the (primary combustion) gasifier, (secondary)cyclonic oxidizer system feed hopper and ash disposal system. Michel-Kim teaches a three-stage process for producing gas from biomass or other carbonizable waste. Graham teach high temperature sealable refractory tile which is used in gasifier systems.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


N. Bhat
Primary Examiner
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